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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/786,113
Filing Date: June 04, 2001
Appellant(s): JOACHIM ET AL.

Harris A. Pitlick
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 14, 2005 appealing from the Office action mailed October 20, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,190,997	Lindemann et al	3-1993
5,972,434	Kajander	10-1999

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5,872,067	Meng et al	2-1999
WO 98/40437	Ettema	09-1998
WO 95/31411	Lohe	11-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Lindemann et al, 5,190,997 (Lindemann) for reasons of record.

In claim 15, the language of “prepared by melting a glass or rock mineral composition, fiberizing the molten glass or mineral composition into filaments to form a mineral wool, applying a size comprising a thermosetting resin to the mineral wool which has just been formed, simultaneously or sequentially applying a hydrophilic latex to the mineral wool, then taking up the sized mineral wool in the form of a web, and then thermally curing the size” are process limitations in a product claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is

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the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 Fed. Cir. 1985.

Accordingly, the subject matter defined by the invention of claim 15 is an insulation product having a hydrophilic latex essentially as defined, applied thereto.

Lindemann teaches an insulation product comprising a hydrophilic latex that is a dispersion or emulsion of homopolymer or copolymer prepared from one or more monomers having at least one hydrophilic functional group. See column 5, line 53-through column 5, line 25, and column 10, lines 54-61.

Therefore, the teachings of Lindemann anticipate the invention as claimed in present claims 15 and 19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-15, 19, 22-27, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajander 5,972,434 in view of Lindemann et al, 5,190,997 (Lindemann) and Meng et al, 5,872,067 (Meng).

Kajander teaches the formation of glass fiber insulation products (claims 15 and 19) comprising a method of making said insulation products wherein the glass fibers can be coated with an aqueous sizing containing a boron compound and a conventional

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film former, applying a binder to the nonwoven mat and curing. In addition, Kajander teaches that known processes for making glass fiber insulation products include the method steps of forming a melt, fiberization of said melt, flame attenuation, spraying with an aqueous solution of a binder, collecting the wetted fibers in the form of a blanket or nonwoven article and heating to cure the resin. See column 12, line 21 through column 13, and line 1. The binder material of Kajander can be a hydrophilic resin prepared from one or more monomers having at least one hydrophilic functional group selected from the group consisting of hydroxyl, carboxyl, and ester, such as urea formaldehyde resin, epoxy resin and acrylic resin, per claims 1 and 5-6. See column 5, line 58 through column 6 and line 3. Kajander is silent as to the specific film former in his size composition. Meng teaches glass fiber mats comprising glass fiber strands coated with a size composition. The size composition comprises one or more film formers that can be thermoplastic or thermosetting, further teaching that suitable film formers include acrylic polymers, vinyl polymers and phenolics, as required by claims 26 and 27. See column 6, line 60, through column 7, line 15 and lines 42-50.

The method steps of melting glass, fiberizing molten glass into filaments, applying a size to the newly formed glass fibers, applying a binder to said fibers, taking up the wetted fibers and curing (claims 1 and 14-15) is well known in the art as evidenced by the teachings of Kajander. Though Kajander is silent as to the specific film former in his size, the utility of thermoset resins as film formers in size compositions for glass fibers is also well known in the art, as evidenced by the teachings of Meng. That Kajander is silent as to the specific film former is of no moment because the skilled

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artisan would immediately envisage thermosetting resins. Moreover, the general level of knowledge and skill in the art at the time the invention was made would have rendered it obvious to choose a conventional film former as required by Kajander, such as a thermosetting resin or phenolic resin, motivated by the teachings of Meng that these resins are suitable in the formation of size compositions. As to the requirement of "improving the mechanical strength after ageing of an insulation product comprising mineral wool", the examiner has reason to believe that the resultant articles of Kajander have improved mechanical strength after ageing because the prior art teaches the same, conventional process steps as applicants, utilizing a similar size composition as required in claim 1. As to claims 6-13, 22-25, and 32, Lindemann teaches the formation of insulation products by applying an adhesive composition to a glass fiber mat and curing. The adhesive composition comprises a homopolymer or copolymer that can be a vinyl polymer or vinyl acetate homopolymer or copolymer, such as polyvinyl acetate or vinyl chloride/ethylene copolymer, as required by claims 5-6 and 8. See column 6, lines 21-25. Also, the latex can contain a protective colloid having hydrophilic functional groups such as cellulose or polyvinyl alcohol, as required by claims 7 and 32. See column 11, lines 41-44 and claim 6. The composition can contain a water-repellent agent such as silicone as contemplated by applicants in claims 9 and 22, and the thermosetting resin can be a phenolic resin, as required by claims 26 and 27. See column 10, line 63 and column 11, line 1. The composition has a T_g and solids content within applicants' range as set forth in claims 10-12 and 23-25. See column 11, lines 21-24 and column 24, lines 53-54. Regarding claim 13, Lindemann teaches mixing the

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hydrophilic latex and thermosetting resin. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the binder of Kajander a binder as taught by Lindemann, with the reasonable expectation of success of obtaining insulation products having maximum dead air space per unit weight.

Accordingly, the combined teachings of Kajander, Lindemann and Meng would have rendered obvious the invention as claimed in present claims 1, 5-15, 18-19, 22-28, and 32.

Claims 2, 16-17, 29-31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajander 5,972,434 in view of Lindemann et al, 5,190,997 (Lindemann) and Meng et al, 5,872,067 (Meng), as applied above to claims 1, 5-15, 18-19, 22-28, and 32, further in view of PCT Publication WO 95/31411 (the publication).

Kajander, Lindemann and Meng are as applied above, but are silent as to their glass fibers being capable of dissolving in a physiological medium. The publication teaches biologically degradable mineral fibers that can be used for insulation purposes, per claims 2 and 16 and comprises at least one alkali metal oxide in the amounts set forth by applicants in claims 29-31. See pages 2-3. While silent as to the specific rate of dissolution as required by claims 17 and 33-34, it is noted that the fibers of the publication are the same type disclosed by applicants as being suitable. Accordingly, it is the position of the examiner that this property is inherent in the fibers of the publication. It would have been obvious to use as the fibers of Kajander mineral fibers as taught by the publication for the efficacious properties associated therewith, namely, biological degradability, temperature stability and good processability.

Therefore, the combined teachings of Kajander, Lindemann, Meng and the publication would have rendered obvious the invention as claimed in present claims 2, 16-17, 29-31, and 33-34.

Claims 18, 28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajander 5,972,434 in view of Lindemann et al, 5,190,997 (Lindemann) and Meng et al, 5,872,067 (Meng), as applied above to claims 1, 5-15, 18-19, 22-28, and 32, further in view of PCT Publication WO 98/40437 (the publication), cited to show the state of the art.

Kajander is as set forth above but does not teach the density of his insulation product. The publication is cited to show the general state of the art at the time the invention was made, namely, that it is known in the art that mineral wool densities varied generally between 5 and 200 kg/m³. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce an insulation product of the type set forth by applicants wherein the density of said product is within the range generally known in the art and as set forth by applicants in claims 18, 28, and 35. Moreover, this limitation is not construed to be a matter of invention in the absence of factual evidence to the contrary.

Therefore, the teachings of Kajander in combination with the general level of ordinary skill and knowledge in the art as evidenced by the publication would have rendered obvious the invention claimed in present claims 18, 28 and 35.

(10) Response to Argument

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Applicants argue that the comparative tests found in the specification shows that properties of the present invention were demonstrably superior when compared to comparative products made without the addition of any latex.

In this concern the comparative tests in the specification have been fully considered and found to be insufficient to overcome the prior art rejections. In particular, claims 15 and 19 are rejected under 35 U.S.C. 102(b) and overcoming said rejection generally cannot be done through the reliance on comparative data. As to the other prior art rejections, applicants' comparative data in the specification compares a composition with latex to a composition without a latex whereby the composition with the latex has superior properties. However, the compositions in the prior art all contain a latex as well. Accordingly, there is no evidence on this record of superior or unexpected properties of the instant composition over those compositions taught in the prior art containing a latex. In addition, there is no evidence on this record of superior or unexpected properties of the claimed critical method steps over the prior art.

Applicants argue that Lindemann is not limited to insulation products and the only example drawn to the use of glass fiber mats is not an insulation product, further arguing that Lindemann is silent to the process steps of the present invention. Applicants also argue that Lindemann refers to a binder composition whereas the present invention refers to a size composition, further arguing that Lindemann does not disclose hydrophilic lattices of the type recited in the present claims.

As to the example of Lindemann being drawn to the use of glass fiber mats, it is the examiner's position that all of the disclosures in a reference must be evaluated for

what they fairly teach one of ordinary skill in the art. In the instant case, Lindemann clearly teaches that nonwoven products such as insulation can be produced. See col. 4, line 44. Regarding Lindemann's silence to the process steps of the present invention, claims 15 and 19 are product-by-process claims, wherein patentability relies upon the product itself. Hence, applicants cannot rely upon the process steps to distinguish the product of Lindemann from that of present claims 15 and 19, in the absence of factual evidence in the form of a back-to-back comparison. The product of Lindemann is the same as that contemplated by applicants. As to applicants' argument that the composition of Lindemann is a binder instead of a size composition, Lindemann teaches a composition substantially similar to that contemplated by applicants in claim 15. Moreover, the composition of claim 15 is not specific as to particular components or amounts of said components that would distinguish said composition from prior art compositions, and it is the examiner's position that applicants' arguments in this regard are drawn to the intended use of the composition and the examiner has reason to believe that the composition of Lindemann can be used in the same way, commensurate with the desired end product.

Applicants argue that Lindemann does not disclose hydrophilic lattices of the type recited in the present claims nor are the presently-recited hydrophilic lattices an aqueous copolymer emulsion which contains a first polymer network which is intertwined on a molecular scale with a second polymer network.

The examiner disagrees. In particular, present claim 15 sets forth that the hydrophilic latex can comprise "a dispersion or emulsion of homopolymer or copolymer

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prepared from one or more monomers each having at least one hydrophilic functional group selected from the group consisting of hydroxyl, carboxyl and ester". This language clearly embraces the polymers taught by Lindemann. See column 3, lines 3-9 and column 10, lines 61-64. Accordingly, the teachings of Lindemann anticipate the invention as claimed in present claims 15 and 19.

Applicants argue that the examiner has analogized two completely different techniques taught by Kajander at column 12 of the reference.

In this regard, the examiner has considered the reference as a whole and what the teachings of said reference would reasonably convey to the skilled artisan at the time of the invention thereof.

Applicants argue that Kajander neither discloses nor suggest nor recognizes any of the benefits of the addition of the presently recited hydrophilic latex during sizing of the mineral wool and before thermally curing the size.

In this regard, Kajander is relied upon for all that he would have reasonably conveyed to one of ordinary skill in the art at the time the invention was made, namely, that the addition of a hydrophilic latex during sizing is known in the art. Whether or not Kajander discloses, recognizes or suggests the benefits contemplated by applicants is of no moment.

Applicants argue that neither Lindemann nor Meng et al remedy the deficiencies of Kajander further arguing that Meng et al is irrelevant because the glass fibers are present to reinforce a polymeric matrix for ultimate formation of a composite as opposed to forming a blanket of intermingled fibers such as disclosed by Kajander.

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Lindemann and Meng are relied upon for all that they would have reasonably conveyed to one of ordinary skill in the art at the time the invention was made. In particular, Lindemann would have provided a suggestion to substitute the binder taught by Kajander with a binder of the type contemplated by Lindemann, and Meng teaches that thermosetting film formers are a known component in size compositions.

Applicant argue that without the present disclosure as a guide, one skilled in the art would not have combined Kajander, Lindemann and Meng et al and even it combined, the result would not be the presently-claimed invention, and even if the combination were prima facie obvious the above discussed comparative data rebuts any such case.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). As to the above discussed comparative data, this data has been considered and found to be insufficient to overcome the prior art rejections for reasons state previously by the examiner and incorporated herein. Also, there is no factual evidence by way of back-to-back comparison of the presently claimed invention and the prior art, said

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evidence clearly showing unexpected or superior properties of the instant invention over the cited prior art.

Applicants argue that WO '411 does not remedy the deficiencies of Kajander, Lindemann and Meng et al and that WO '411 has been relied upon for its biologically degradable mineral-fiber compositions however, if such a composition were used in the composition resulting from the combination of Kajander, Lindemann and Meng et al, the result would still not be the presently claimed invention, further arguing that this combination of prior art could not have predicted the above discussed superior results obtained especially with the mineral wool having the properties recited in the present claims.

In this regard, WO '411 is relied upon for its teachings of biologically degradable mineral fibers that can be used for insulation purposes. As set forth previously, it would have been obvious to use as the fibers of Kajander, mineral fibers as taught by WO '411 with the reasonable expectation of obtaining insulation products having biological degradability, temperature stability and good processability. The examiner's remarks regarding applicants' alleged superior results have been stated previously and are fully incorporated herein.

Applicants argue that WO '347 does not remedy the deficiencies of Kajander, Lindemann and Meng et al, further arguing that the examiner relies on the teachings of WO '437 for a disclosure of mineral wool density however, if such a composition were used in the composition resulting from the combination of Kajander, Lindemann and Meng et al, the result would still not be the presently claimed invention.

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In response thereto, WO '437 is relied upon for its teachings of biologically degradable mineral fibers that can be used for insulation purposes having the requisite density. It would have been obvious to one of ordinary skill in the art at the time the invention was made to produce an insulation product of the type set forth by applicants wherein the density of said product is within the range generally known in the art and as set forth by applicants.

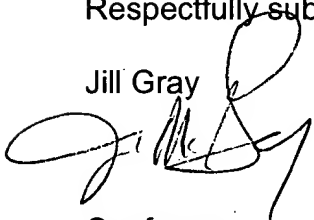
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jill Gray



Conferees:

Rena Dye



Carol Chaney

